

CARRIER RECOVERY SYSTEM AND METHOD THEREOF

Abstract

A carrier recovery system includes an in-phase mixer for mixing an incoming signal with an in-phase reference signal to produce an in-phase baseband signal; a quadrature-phase mixer for mixing the incoming signal with a quadrature-phase reference signal to produce a quadrature-phase baseband signal; a DC detector for measuring a DC offset of the quadrature-phase baseband signal; and a frequency synthesizer for generating the in-phase reference signal and the quadrature-phase reference signal according to the DC offset measured by the DC detector. The quadrature-phase reference signal is the in-phase reference signal phase-delayed by ninety degrees. The DC offset of the quadrature-phase baseband signal is caused by a pilot tone of the VSB signal for a selected carrier in an Advanced Television Systems Committee (ATSC) digital television (DTV) receiver. By minimizing the DC offset, the carrier recover system locks the quadrature-phase reference signal and the in-phase reference signal to the selected channel.